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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/081,256
Filing Date: February 19, 2002
Appellant(s): OVARD ET AL.

James D. Shaurette
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/17/2007 appealing from the Office action mailed 08/11/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

B. The 103 rejection of claims 8, 10-13, 16-19, 21-22, 31-34,36-39, 46, 47, 49, and 57 since claims 5-6 and 28 are rejected over MacLellan in view of Jandrell and claims 14-15, 20 and 35 are rejected over the combination of MacLellan in view of Reis and further in view of Jandrell.

Grounds Of Rejection Not On Review

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief.

-Claims 5-6, 14-15, 20, 28, and 35 are rejected over the combination of MacLellan in view of Reis and further in view of Jandrell.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,649,296	MACLELLAN et al	07-1997
5,640,151	REIS	06-1997
5,526,357	JANDRELL	06-1996
5,361,395	YAMAMOTO	11-1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 9, 24-26, 29-30, 40-41, 44-45, 48, and 50-56 are rejected under 35 U.S.C 102(b) as being anticipated by MacLellan et al (US 5,649,296).

Claims 4-6 and 27-28 are rejected under 35 U.S.C 103(a) over MacLellan et al (US 5,649,296) in view of Jandrell (US 5,526,357).

Claims 13-15, 20, and 34-35 are rejected under 35 U.S.C 103(a) over MacLellan et al (US 5,649,296) in view Reis et al (US 5,640,151) and further in view of Jandrell (US 5,526,357).

Claims 8, 10-12, 16-19, 21-22, 31-33, 36-39, 46-47, 49, and 57 are rejected under 35 U.S.C 103(a) as being unpatentable over MacLellan et al (US 5,649,296) in view Reis et al (US 5,640,151).

New grounds of rejection is made for claim 7 as being rejected under obvious 35 U.S.C. 103(a) under MacLellan et al, and for claim 16 as being rejected under obvious 35 U.S.C. 103(a) under MacLellan et al and Reis et al.

New grounds of rejection is made for claims 4 and 27 as being rejected under obvious 35 U.S.C. 103(a) under MacLellan et al (US 5,649,296) in view of Yamamoto (US 5,361,395).

New grounds of rejection is made for claims 13 and 34 as being rejected under obvious 35 U.S.C. 103(a) under MacLellan et al (US 5,649,296) in view of Reis (5,640,151) and further in view Yamamoto (US 5,361,395).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 9, 24-26, 29-30, 40-41, 44-45, 48, 50-56 are rejected under 35 U.S.C. 102(b) as being anticipated by MacLellan et al (US 5,649,296).

Regarding claim 1, MacLellan et al disclose a wireless communication system comprising:

at least one remote communication device (105; fig. 1) configured to communicate a return link wireless signal (col 4, lines 16-18) responsive to a forward link wireless signal (col 3, lines 35-37); and

an interrogator (103; figs. 1 & 3) including a communication station (303, 307) (note: there was a typo in the office action for reference numeral 203 instead of #303, however, according to figure 2 of MacLellan, #203 is also a transmitter which is the same as in figure 3) configure to output the forward link wireless signal (col 3, lines 35-37), to receive (via receive antenna 206 and 307) the return link wireless signal outputted from the remote communication device (103) and to generate a return link communication signal (via 307) corresponding to the return link wireless signal (fig. 3),

communication circuitry (mixer 308, amplifier 309) coupled with the communication station and configured to communicate the return link communication signal (col 3, lines 53-62), and

a housing (BPF 310, limiting amplifier 310a, demodulator 312, processor 300) remotely located with respect to the communication station and including circuit configured to receive the return link communication signal from the communication circuit and to process the return link communication signal (col 3, line 59-62; col 5, lines 2-6).

Regarding claim 2, MacLellan et al disclose the wireless communication system according to claim 1 wherein the communication station includes a low noise amplifier (307) configured to increase the power of the return link communication signal (col 3, lines .

Regarding claim 3, MacLellan et al disclose the wireless communication system according to claim 1 wherein the housing includes adjustment circuitry (BPF and Limiting Amplifier) configured to receive the return link communication signal from the communication circuitry (308 and immediate amplifier) and to adjust an electrical characteristic of the return link communication signal (fig. 3).

Regarding claim 9, MacLellan et al disclose the wireless communication system according to claim 1 wherein the remote communication device (105) comprises a radio frequency identification device (see fig. 1).

Regarding claim 24, MacLellan et al disclose a method of communicating within a wireless communication system comprising:

providing an interrogator (103; figs. 1 & 3) and at least one remote communication device; communicating a forward link wireless signal using a communication station (203, 307) of the interrogator (col 3, lines 35-37); communicating a return link wireless signal using the remote communication device responsive to the communicating of the forward link wireless signal (col 4, lines 16-18); receiving the return link wireless signal within the communication station (307) (col 4, lines 52-57; col 3, lines 59-62), generating a return link communication signal (via 307) within the communication station corresponding to the return link wireless signal received via

antenna 306; communicating the return link communication signal from the communication station (307) using communication circuitry (mixer 308, amp 309) (col 3, lines 53-62); and

receiving the return link communication signal from the communication circuitry within a housing (BPF 310, limiting amp 310a; demodulator 312, processor 300) of the interrogator remotely located from the communication station (307) (col 3, lines 59-62).

Regarding claim 25, MacLellan et al disclose the method according to claim 24 further comprising amplifying (via limiting amplifier 310a) the return link communication signal before the communicating the return link communication signal.

Regarding claim 26, MacLellan et al disclose the method according to claim 24, further comprising adjusting (via BPF 310 and limiting amplifier 310a) at least one electrical characteristic of the return link communication signal.

Regarding claim 29, MacLellan et al disclose the method according to claim 24, wherein the providing at least one remote communication device comprises providing a radio frequency identification device (identification tag 105; fig. 1).

Regarding claim 30, MacLellan et al the method according to claim 24, further comprising processing (via 300) the return link communication signal after the receiving the return link communication signal (fig. 3).

Regarding claim 40, MacLellan et al disclose the wireless communication system according to claim 1, wherein MacLellan et al disclose the at least one remote communication device (105) is configured to receive the forward link wireless signal (col

3, lines 63-67), and to communicate the return link wireless signal responsive to receiving the forward link wireless signal (col 4, lines 16-18).

Regarding claim 41, MacLellan et al disclose the method according to claim 24, wherein MacLellan et al disclose the method further comprising receiving the forward link wireless signal within the at least one remote communication device (105) (col 3, lines 63-67), and wherein the communicating the return link wireless signal is responsive to the receiving (col 4, lines 16-18).

Regarding claim 44, MacLellan et al disclose the wireless communication system according to claim 1, wherein MacLellan et al disclose the at least one remote communication device and the interrogator are configured to implement radio frequency identification device (RFID) communications (col 2, lines 59-66).

Regarding claim 45, MacLellan et al disclose the wireless communication system according to claim 1, wherein the communication station is configured to generate the return link communication signal (via 307) comprising data received within the return link wireless signal received via antenna 306.

Regarding claim 48, MacLellan et al disclose the method according to claim 24, wherein the generating (via 307) comprises generating the return link communication signal to comprise data received within the return link wireless signal received via antenna 306.

Regarding claim 50, MacLellan et al disclose the wireless communication system according to claim 1, wherein the housing (310, 310a, 312, 300; col 3, lines 45-62) is configured to house the circuit configured to receive the return link communication

signal (communication signal from 308 and IF amp) and to process (via 310, 310a, 312, 300) the return link communication signal (via 312, 300).

Regarding claim 51, MacLellan et al disclose the wireless communication system according to claim 1 wherein the housing (310, 310a, 312, 300) is configured to house the circuitry configured to receive the return link communication signal (communication signal from 308 and IF amp) and to process the return link communication signal separately (via 310, 310a, 312, 300) from circuit of the communication station (307).

Regarding claim 52, MacLellan et al disclose the wireless communication system according to claim 1, wherein the communication station (307) comprises a circuit device remotely located from the housing (310, 310a, 312, 300).

Regarding claim 53, MacLellan et al disclose the wireless communication system according lo claim 1, wherein the communication station (307) and housing (310, 310a, 312, 300) comprise respective different circuit devices (shown in figure 3).

Regarding claim 54, MacLellan et al disclose the wireless communication system according to claim 1, wherein the communication circuitry (mixer 308 and IF amp) is configured to communicate the return link communication signal comprising a wireless signal (wireless signal received via antenna 306 and converted to IF via 308).

Regarding claim 55, MacLellan et al disclose the wireless communication system according to claim 1, wherein the communication circuitry (mixer 308 and IF amp) is configured to communicate the return link communication signal comprising a wireless signal (wireless signal received via antenna 306) having a frequency outside of a

frequency band of the wireless communications of the forward link wireless signal and the return link wireless signal (frequency band within IF range by converting via 308).

Regarding claim 56, MacLellan et al disclose the wireless communication system according to claim 1, wherein the communication station (307) and housing (310, 310a, 312, 300) are located in different geographical locations (due to the placement of circuit element 307 in another area of the receiver than the housing circuitry).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5-6 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan in view of Jandrell (US 5,526,357).

Regarding claim 5, MacLellan et al disclose the wireless communication system according to claim 1, wherein MacLellan et al do not specifically disclose the adjustment circuitry includes automatic gain control circuitry. Jandrell discloses an adjustment circuitry (3008; 3031, 3033; figs. 32b, 32d) includes automatic gain control circuitry (3008, fig. 32b; col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have automatic gain control in order to

maintain gain at a constant level and to control the gain of the limiting amplifier as suggested by Jandrell.

Regarding claim 6, MacLellan et al disclose the wireless communication system according to claim 5 wherein Jandrell discloses the automatic gain control circuitry (3008; fig. 32b) is configured to monitor the power of return link communication signal and to adjust the power of the return link communication signal (via controlling gain of 3033; fig. 32d) responsive to the monitoring (col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the power of the return link communication signal in order to maintain the level of the downconverted signal constant regardless of the time varying RF signal.

Regarding claim 28, MacLellan et al disclose the method according to claim 26, wherein the adjusting comprises adjusting using automatic gain control circuitry. MacLellan et al do not specifically disclose the adjusting circuitry includes automatic gain control circuitry. Jandrell discloses an adjusting circuitry (3008; 3031, 3033; figs. 32b, 32d) includes automatic gain control circuitry (3008, fig. 32b; col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have automatic gain control in order to maintain gain at a constant level and to control the gain of the limiting amplifier as suggested by Jandrell.

5. Claims 4 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan in view of Yamamoto (US 5,361,395).

Regarding claim 4, MacLellan et al disclose the wireless communication system according to claim 3, wherein MacLellan et al do not specifically disclose the adjustment

circuitry is configured to output the return link communication signal at a substantially constant level. In the same field of endeavor, Yamamoto discloses an adjustment circuitry (automatic gain controller/AGC 10; filter 17, IF amplifier 16; figure 1; see column 4, lines 22-26; col 3, lines 11-20) configured to output the return link communication signal at a substantially constant level (AGC 10 is capable of adjusting the power level of the return link communication signal by a gain control signal adjusting a gain of IF amplifier 16 to keep constant the power level of the output signal). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Yamamoto's known technique of AGC to the IF amplifier of MacLellan's in order to enable the output signal to be quickly returned to its previous level by providing an AGC circuit in which control data to be sent to the amplifier is generated on the basis of previously held data on the amplifier's output level, so the gain is controlled to produce a predictable result, herein a constant output signal based on previously held data as suggested by Yamamoto (col 3, lines 11-20).

Regarding claim 27, MacLellan et al disclose the method according to claim 26, wherein MacLellan et al do not specifically disclose the adjusting provides a return link communication signal having a substantially constant level. In the same field of endeavor, Yamamoto discloses an adjustment circuitry (automatic gain controller/AGC 10; filter 17, IF amplifier 16; figure 1; see column 4, lines 22-26; col 3, lines 11-20) configured to output the return link communication signal at a substantially constant level (AGC 10 is capable of adjusting the power level of the return link communication signal by a gain control signal adjusting a gain of IF amplifier 16 to keep constant the

power level of the output signal). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Yamamoto's known technique of AGC to the IF amplifier of MacLellan's in order to enable the output signal to be quickly returned to its previous level by providing an AGC circuit in which control data to be sent to the amplifier is generated on the basis of previously held data on the amplifier's output level, so the gain is controlled to produce a predictable result, herein a constant output signal based on previously held data as suggested by Yamamoto (col 3, lines 11-20).

6. Claims 14-15, 20, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al in view of Reis et al (US 5,640,151) and further in view of Jandrell (US 5,526,357).

Regarding claim 14, MacLellan et al and Reis et al disclose the interrogator according to claim 12, wherein MacLellan et al do not specifically disclose the adjustment circuitry includes automatic gain control circuitry. Jandrell discloses an adjustment circuitry (3008; 3031, 3033; figs. 32b, 32d) includes automatic gain control circuitry (3008, fig. 32b; col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have automatic gain control in order to maintain gain at a constant level and to control the gain of the limiting amplifier as suggested by Jandrell.

Regarding claim 15, MacLellan et al, Reis et al, and Jandrell disclose the interrogator according to claim 14 wherein Jandrell discloses the automatic gain control

circuitry (3008, fig. 32b) is configured to monitor the power of return link communication signal and to adjust the power of the return link communication signal responsive to the monitoring (col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the power of the return link communication signal in order to maintain the level of the downconverted signal constant regardless of the time varying RF signal.

Regarding claim 20, MacLellan et al and Reis et al disclose the interrogator according to claim 19, wherein MacLellan et al and Reis et al do not specifically disclose the adjustment circuitry includes automatic gain control circuitry. Jandrell discloses an adjustment circuitry (3008; 3031, 3033; figs. 32b, 32d) includes automatic gain control circuitry (3008, fig. 32b; col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have automatic gain control in order to maintain gain at a constant level and control the gain of the limiting amplifier as suggested by Jandrell.

Regarding claim 35, MacLellan et al and Reis et al disclose the method according to claim 33 wherein MacLellan et al and Reis et al do not disclose the adjusting comprises adjusting using automatic gain control circuitry. Jandrell discloses an adjusting circuitry (3008; 3031, 3033; figs. 32b, 32d) comprises adjusting using automatic gain control circuitry (3008, fig. 32b; col 51, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have automatic gain control in order to maintain gain at a constant level and to control the gain of the limiting amplifier as suggested by Jandrell.

7. Claims 13 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al in view of Reis et al (US 5,640,151) and further in view of Yamamoto (US 5,361,395).

Regarding claim 13, MacLellan et al and Reis disclose the interrogator according to claim 12, wherein MacLellan et al and Reis do not specifically disclose the adjustment circuitry is configured to output the return link communication signals at a substantially constant level. In the same field of endeavor, Yamamoto discloses an adjustment circuitry (automatic gain controller/AGC 10; filter 17, IF amplifier 16; figure 1; see column 4, lines 22-26; col 3, lines 11-20) configured to output the return link communication signal at a substantially constant level (AGC 10 is capable of adjusting the power level of the return link communication signal by a gain control signal adjusting a gain of IF amplifier 16 to keep constant the power level of the output signal). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Yamamoto's known technique of AGC to the IF amplifier of MacLellan in order to enable the output signal to be quickly returned to its previous level by providing an AGC circuit in which control data to be sent to the amplifier is generated on the basis of previously held data on the amplifier's output level, so the gain is controlled to produce a predictable result, herein a constant output signal based on previously held data as suggested by Yamamoto (col 3, lines 11-20).

Regarding claim 34, MacLellan et al and Reis disclose the method according to claim 33, wherein MacLellan et al and Reis do not specifically disclose the adjustment circuitry is configured to output the return link communication signals at a substantially

constant level. In the same field of endeavor, Yamamoto discloses an adjustment circuitry (automatic gain controller/AGC 10; filter 17, IF amplifier 16; figure 1; see column 4, lines 22-26; col 3, lines 11-20) configured to output the return link communication signal at a substantially constant level (AGC 10 is capable of adjusting the power level of the return link communication signal by a gain control signal adjusting a gain of IF amplifier 16 to keep constant the power level of the output signal). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Yamamoto's known technique of AGC to the IF amplifier of MacLellan in order to enable the output signal to be quickly returned to its previous level by providing an AGC circuit in which control data to be sent to the amplifier is generated on the basis of previously held data on the amplifier's output level, so the gain is controlled to produce a predictable result, herein a constant output signal based on previously held data as suggested by Yamamoto (col 3, lines 11-20).

8. Claims 8, 10-13, 16-19, 21-22, 31-33, 36-39, 46-47, 49, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al (US 6,456,668) in view of Reis et al (US 5,640,151).

Regarding claim 8, MacLellan et al disclose the wireless communication system according to claim 1 wherein MacLellan do not disclose the communication circuitry includes a plurality of wireless transceivers individually coupled with one of the housing and the communication station. Reis et al disclose an interrogator (fig. 2) comprising communication circuitry including a plurality of wireless transceivers (101-1-->101-M, 103-1 -->103-M) individually coupled with one of the housing (102) and the

communication station (col 9, lines 35-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of wireless transceivers within the interrogator of MacLellan in order to be able to broadcast commands from one interrogator on a one-to-many basis on multiple transmitters and to receive responses from the abundant remote tags on multiple receivers simultaneously in an organized, time and energy efficient manner which resolves communication contentions in a wide communication region as suggested by Reis et al (col 6, lines 20-40).

Regarding claim 10, MacLellan et al disclose an interrogator of a wireless communication system comprising an interrogator (103; figs. 1 & 3) including a communication station (203, 307) configure to output the forward link wireless signal (col 3, lines 35-37), to receive (via receive antenna 206 and 307) the return link wireless signal outputted from the remote communication device (103) (col 4, lines 16-18, lines 52-57; col 3, lines 59-62) and to generate a return link communication signal (via 307) corresponding to the return link wireless signal (fig. 3), a communication circuitry (mixer 308, amplifier 309) coupled with the communication station and configured to communicate the return link communication signal, and a housing (BPF 310, limiting amp 310a, demodulator 312, processor 300) remotely located with respect to the communication station and including circuit configured to receive the return link communication signal from the communication circuit and to process the return link communication signal (col 3, lines 59-62). MacLellan et al do not disclose an interrogator comprising a plurality of communication stations positioned in different

locations and individually configured to output a forward link wireless signal, to receive a return link wireless signal responsive to the outputting, and to generate a return link communication signal corresponding to the return link wireless signal; communication circuits individually coupled with the communication stations and configured to communicate respective ones of the return link communication signals; and a housing remotely located with respect to the communication stations and including circuitry configured to receive the return link communication signals from the communication circuits and to process the return link communication signals. Reis et al disclose an interrogator (fig. 2) comprising a plurality of communication stations (101-1-->101-M, 103-1 -->103-M) positioned in different locations and individually configured to output a forward link wireless signal (via RF Trans 103-1 -->103-M), to receive a return link wireless signal responsive to the outputting (via RF Rec (101-1-->101-M), and to generate a return link communication signal corresponding to the return link wireless signal (col 9, lines 35-65); communication circuits (circuitry connected within 101-1 -->101-M, 103-1 -->103-M) which represent the whole conventional superheterodyne or other similar receiver inherently containing communication circuits) individually coupled with the communication stations and configured to communicate respective ones of the return link communication signals (col 9, lines 49-54, lines 23-34); and a housing (102) remotely located with respect to the communication stations and including circuitry configured to receive the return link communication signals from the communication circuits and to process the return link communication signals (col 9, lines 35-65; col 10, lines 41-53). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have a plurality of communication modules within the interrogator of MacLellan in order to be able to broadcast commands from one interrogator on a one-to-many basis or even one to one basis on multiple transmitters and to receive responses from the abundant remote tags on multiple receivers simultaneously in an organized, time and energy efficient manner which resolves communication contentions in a wide communication region as suggested by Reis et al (col 6, lines 20-40).

Regarding claim 11, MacLellan et al and Reis et al disclose the wireless communication system according to claim 1, wherein MacLellan et al disclose each of the communication station includes a low noise amplifier (307) configured to increase the power of the return link communication signal (fig. 3).

Regarding claim 12, MacLellan et al and Reis et al disclose the wireless communication system according to claim 10, wherein MacLellan et al disclose the housing includes adjustment circuitry (BPF 310 and Limiting Amplifier 310a) configured to receive the return link communication signal from the communication circuitry (308 and immediate amplifier) and to adjust an electrical characteristic of the return link communication signal (fig. 3).

Regarding claim 13, MacLellan et al and Reis et al disclose the wireless communication system according to claim 12, wherein the adjustment circuit (BPF 310a and limiting amplifier 310) is configured to output the return link communication signal at a substantially constant level.

Regarding claim 16, MacLellan et al and Reis et al disclose the wireless communication system according to claim 12, wherein the communication circuitry (quad mixer 308 and amplifier 309) includes a cable (inherent cable connected from mixer to amplifier; see fig. 3). MacLellan and Reis do not specifically disclose an RF coaxial cable. However, the examiner takes official notice that it is notoriously old and well known in the art to replace a cable in which its type is not specified with an RF coaxial cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a coaxial cable in order to enhance its information/data carrying capacity to larger quantities.

Regarding claim 17, MacLellan et al and Reis et al disclose the wireless communication system according to claim 10, wherein Reis et al disclose the interrogator (fig. 2) comprising communication circuitry including a plurality of wireless transceivers(101-1-->101-M, 103-1 -->103-M) individually coupled with one of the housing (102) and the communication station (col 9, lines 35-65).

Regarding claim 18, MacLellan et al disclose an interrogator of a wireless communication system comprising an interrogator (103; figs. 1 & 3) including a communication station (203, 307) configure to output the forward link wireless signal (col 3, lines 30-32), to receive (via receive antenna 206 and 307) the return link wireless signal outputted from the remote communication device (103) responsive to the outputting (col 4, lines 16-18, lines 52-57; col 3, lines 59-62) and to generate a return link communication signal (via 307) corresponding to the return link wireless signal (fig. 3), and a housing (BPF 310, limiting amp 310a, demodulator 312, processor 300)

remotely located with respect to the communication station and including circuit configured to receive the return link communication signal from the communication circuit and to process the return link communication signal (col 3, lines 59-62). MacLellan et al do not disclose an interrogator comprising a plurality of communication stations positioned in different locations and individually configured to output a forward link wireless signal, to receive a return link wireless signal responsive to the outputting, and to generate a return link communication signal corresponding to the return link wireless signal; and a housing remotely located with respect to at least one of the communication stations and including circuitry configured to receive the return link communication signals from the communication circuits and to process the return link communication signals. Reis et al disclose an interrogator (fig. 2) comprising a plurality of communication stations (101-1-->101-M, 103-1 -->103-M) positioned in different locations and individually configured to output a forward link wireless signal (via RF Trans (103-1 -->103-M), to receive a return link wireless signal responsive to the outputting (RF Rec 101-1-->101-M), and to generate a return link communication signal corresponding to the return link wireless signal (col 9, lines 35-65); and a housing (102) remotely located with respect to at least one of the communication stations (101-1-->101-M, 103-1 -->103-M) and including circuitry configured to receive the return link communication signals from the communication circuits and to process the return link communication signals (col 9, lines 35-65; col 10, lines 41-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of communication modules within the interrogator of MacLellan in order to be

able to broadcast commands from one interrogator on a one-to-many basis on multiple transmitters and to receive responses from the abundant remote tags on multiple receivers simultaneously in an organized, time and energy efficient manner which resolves communication contentions in a wide communication region as suggested by Reis et al (col 6, lines 20-40).

Regarding claim 19, MacLellan et al and Reis et al disclose the interrogator according to claim 18, wherein MacLellan et al disclose the housing includes adjustment circuitry (BPF 310 and limiting amp 310a) configured to adjust at least one electrical characteristic of the return link communication signals.

Regarding claim 21, MacLellan et al and Reis et al disclose the interrogator according to claim 18, wherein MacLellan et al disclose the interrogator comprise communication circuits (mixer 308, amplifier 309) coupled with the communication station and configured to communicate the return link communication signal (col 3, lines 53-62) and where Reis et al disclose the interrogator comprising a plurality of communication circuits (circuitry connected within 101-1-->101-M, 103-1 -->103-M which represent a whole conventional superheterodyne or other similar receiver inherently containing communication circuits) of communication modules configured to communicate the return link communication signals intermediate respective communication stations and the housing (col 9, lines 35-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of communication circuitry in order to have more circuitry to strengthen the characteristic of the received RF signals when a signal from a particular remote device

out of a plurality of remote device sends a corresponding return wireless link to a particular communication station for reception.

Regarding claim 22, MacLellan et al and Reis et al disclose the interrogator according to claim 18, wherein Reis et al disclose the communication stations (101-1-->101-M, 103-1 -->103-M) are individually positioned to receive return link wireless signals within one of a plural of communication ranges (fig. 2; col 9, lines 35-65).

Regarding claim 31, MacLellan et al disclose a method of communicating within a wireless communication system comprising:

providing an interrogator (103; figs. 1 & 3) having a housing (BPF 310, limit amp 310a, 312, 300) and a communication station (203, 307) remotely located from the housing ,

communicating forward link wireless signals using the communication stations of the interrogator (103) (col 3, lines 35-37),

receiving return link wireless signals within the respective communication stations of the interrogator responsive to the communicating the respective forward link wireless signals (col 4, lines 16-18, lines 52-57; col 3, lines 59-62),

generating return link communication signals (via 307) within the communication station (203, 307) corresponding to the return link wireless signal (col 3, lines 53-62),

communicating the return link communication signals from the communication station using respective communication circuits; and receiving the return link communication signals within the housing from the communication circuits. MacLellan et al do not disclose a plurality of communication stations remotely located from the

housing, and communicating the return link communication signals from the communication stations using respective communication circuits. Reis et al disclose a plurality of communication stations (101-1-->101-M, 103-1 -->103-M) remotely located from the housing (102), and communicating the return link communication signals from the communication stations using respective communication circuits (circuits connected within 101-1-->101-M, 103-1 -->103-M which represent the whole conventional superheterodyne or other similar receiver inherently containing communication circuits) (col 9, lines 49-54, lines 23-34) and receiving the return link communication signals within the housing (102) from the communication circuits (col 9, lines 35-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of communication stations remotely located from the housing within the interrogator of MacLellan in order to be able to broadcast commands from one interrogator on a one-to-many basis (point-to-multipoint) on multiple transmitters and to receive responses from the abundant remote tags on multiple receivers simultaneously in an organized, time and energy efficient manner which resolves communication contentions in a wide communication region as suggested by Reis et al (col 6, lines 20-40).

Regarding claim 32, MacLellan et al and Reis et al disclose the method according to claim 31, further comprising amplifying the return link communication signals before the communicating the return link communication signals.

Regarding claim 33, MacLellan et al and Reis et al disclose the method according to claim 31, wherein MacLellan et al and disclose the method comprising

adjusting at least one characteristic of the return link communication signals (via BPF 310 and limit amp 310a) after the receiving the return link communication signals.

Regarding claim 36, MacLellan et al and Reis et al disclose the method according to claim 31, wherein Reis et al disclose the communication stations (101-1-->101-M, 103-1 -->103-M) individually receive return link wireless signals within one of a plurality of communication ranges (col 9, lines 35-65).

Regarding claim 37, MacLellan et al and Reis et al disclose the method according to claim 31, wherein MacLellan et al disclose further comprising processing (via 300; fig. 3) the return link communication signals after the receiving the return link communication signals.

Regarding claim 38, MacLellan et al and Reis et al disclose the wireless communication system according to claim 1, wherein Reis et al disclose the interrogator comprises a plurality of the communication stations (101-1-->101-M, 103-1 -->103-M).

Regarding claim 39, MacLellan et al disclose the method according to claim 24, wherein MacLellan et al do not disclose the providing comprises providing the interrogator comprising a plurality of the communication stations. Reis et al disclose providing the interrogator (103) comprising a plurality of the communication stations (101-1-->101-M, 103-1 -->103-M). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of the communication stations in order to receive responsive signals from each of the remote tags at each of the corresponding receivers.

Regarding claim 46, MacLellan et al and Reis et al disclose the interrogator according to claim 10, wherein Reis et al disclose the communication stations (101-1-->101-M, 103-1 -->103-M) are individually configured to generate the return link communication signal via inherent receiving circuitry within the within the superheterodyne or similar receiver comprising data received within the return link wireless signals.

Regarding claim 47, MacLellan et al and Reis et al disclose the interrogator according to claim 18 wherein Reis et al disclose the communication stations (101-1-->101-M, 103-1 -->103-M) are configured to generate the return link communication signals comprising data received within respective ones of the return link wireless signals via inherent receiving circuitry within the superheterodyne or similar receiver comprising data received within the return link wireless signals.

Regarding claim 49, MacLellan et al and Reis et al disclose the method according to claim 31 wherein MacLellan et al disclose the generating comprises generating (via 307) the return link communication signals to comprise data received within respective ones of the return link wireless signals via antenna 306.

Regarding claim 57, MacLellan et al disclose the wireless communication system according to claim 1, wherein MacLellan et al do not disclose the interrogator comprises a plurality of the communication stations configured to communicate with respective remote communication devices located in different geographical locations.
Reis et al disclose an interrogator (fig. 2) comprising a plurality of communication stations (101-1-->101-M, 103-1 -->103-M) located in different locations and individually

configured to communicate (via RF Trans (103-1 -->103-M, RF Rec 101-1-->101-M) with respective remote communication devices (8-1 to 8T) (col 9, lines 35-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of communication modules within the interrogator of MacLellan in order to be able to broadcast commands from one interrogator on a one-to-many basis on multiple transmitters and to receive responses from the abundant remote tags on multiple receivers simultaneously in an organized, time and energy efficient manner which resolves communication contentions in a wide communication region as suggested by Reis et al (col 6, lines 20-40).

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al (US 5,649,296).

Regarding claim 7, MacLellan et al disclose the wireless communication system according to claim 1, wherein the communication circuitry includes a cable (cable connecting low noise amplifier 307 with mixer 308 and cable connecting mixer 308 with amplifier 309). MacLellan et al do not specifically disclose an RF coaxial cable. However, the examiner takes official notice that it is notoriously old and well known in the art to replace a cable with an RF coaxial cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a coaxial cable in order to enhance its information/data carrying capacity to larger quantities.

(10) Response to Argument

A. According to section A of Argument section VII, appellants state that MacLellan (US 5,649,296) et al (hereinafter MacLellan) does not disclose the claimed housing.

However, the examiner respectfully disagrees. The examiner refers to the Grounds of Rejection (or in the Final Office Action, beginning of page 3) wherein the examiner clearly pointed out this teaching. Specifically, as shown in figure 3 and column 3, lines 59-62 of MacLellan wherein the cited passage of col 3, lines 59-62 refers to Fig. 3 and also refers to Fig. 2 (col 5, lines 2-6) due to the same function of the subcarrier demodulator and processor of fig. 2 with figure 3, given the broadest reasonable interpretation, the housing is considered component 310 (BPF), and/or components 310a (Limiting Amp), 312 (Subcarrier Demodulator), 300 (Processor), each of these components taken alone may already be considered a housing. In an alternative mapping/interpretation of the reference to the claimed housing, all of the components taken integrally as a whole, wherein circuitry elements 310, 310a, 312, and 300 can be integrated into one single baseband block as shown in "Housing" block labeled in the below drawing (**Note: see figure 3 of MacLellan shown below**). The examiner would like to point out that applicant's specification (fig. 5) also disclose an interrogator "housing" comprising a plurality of circuit elements 70, 72, 74, 76, 78, 80, 82, 84. Therefore, it is in fact considered a fair interpretation, given the broadest reasonable interpretation in light of the specification according to MPEP §2111, that the housing in the cited prior art, MacLellan, which also comprise a plurality of circuit elements (310, 310a, 312, and 300) as explained above, is read in light of applicant's specification (figure 5) wherein housing 14 comprises a plurality of circuit elements 70, 72, 74, 76, 78, 80, 82, 84. See MPEP section §2111 ------for claim interpretation, during patent examination, the pending claims must be given their broadest reasonable interpretation

consistent with the specification." >The Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard: The Patent and Trademark Office determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004)--------.

Appellants also alleged that the housing of the cited prior art, MacLellan, is not considered to be remotely located from the communication station which is also of the same interrogator 103. However, the examiner respectfully disagrees. As shown in fig. 3 of MacLellan, the "Housing" block (reference numeral block 310, 310a, 312, and 300) is located a spatial distance away, or in other words positioned apart, from the "Communication Station" block (reference numeral block 303 and 307). The communication station (transmitter 303 & low noise amplifier 307) is not even adjacent to the housing (310, 310a, 312, and 300) since it is separated by reference numeral blocks 308 and 309. Also, based on figure 1 in the appellant's application, an interrogator 26 "includes" interrogator housing 14 and communication station 120 which correspond to the claim language in line 4 of exemplary claim 1 of appellant's claims which states "an interrogator including…", which means the communication station and the housing are both considered part of the same interrogator. Therefore, the claim language, the housing is "remotely located" with respect to the communication station,

is interpreted to correspond with applicant's specification and claims to be spatially separated but still within the same device, herein the "interrogator". See MPEP section §2111 ------for claim interpretation, during patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard: The Patent and Trademark Office determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004)--------.

Accordingly, the prior art MacLellan is fairly interpreted to have the interrogator 103 including the "Housing" block shown in the below copied figure 3 of MacLellan (reference numeral block 310, 310a, 312, and 300) (***Note: see figure 3 shown and labeled by examiner below***) to be "remotely located" or positioned a spatial distance away, in other words placed apart by a spatial distance, from the communication station (303 and 307) by being separated by the "Communication Circuitry" block (reference numeral blocks 308 and 309) as disclosed in the below fig. 3 of MacLellan (**Note: See figure 3 shown below***) which corresponds with applicant's drawings and specification as explained directly above, wherein the interrogator housing and the communication station are included within the same interrogator device.

Appellant additionally refer to the specification of the application, stating ".....a plurality of different communication ranges or read zones 15, the communication stations 120 radiate the forward link wireless signals to different remote communication devices 12 within the different ranges 15..... where interrogator housing and circuitry service multiple ranges 15 which may be located several hundred feet apart, or further in harsh environments, in spaced warehouses, and the communication ranges 15 may be spaced from one another at distances which exceed the communication range of the devices.....". In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., radiating the forward link wireless signals to different remote communication devices within the different communication ranges and read zones which exceed the communication range of the devices...) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

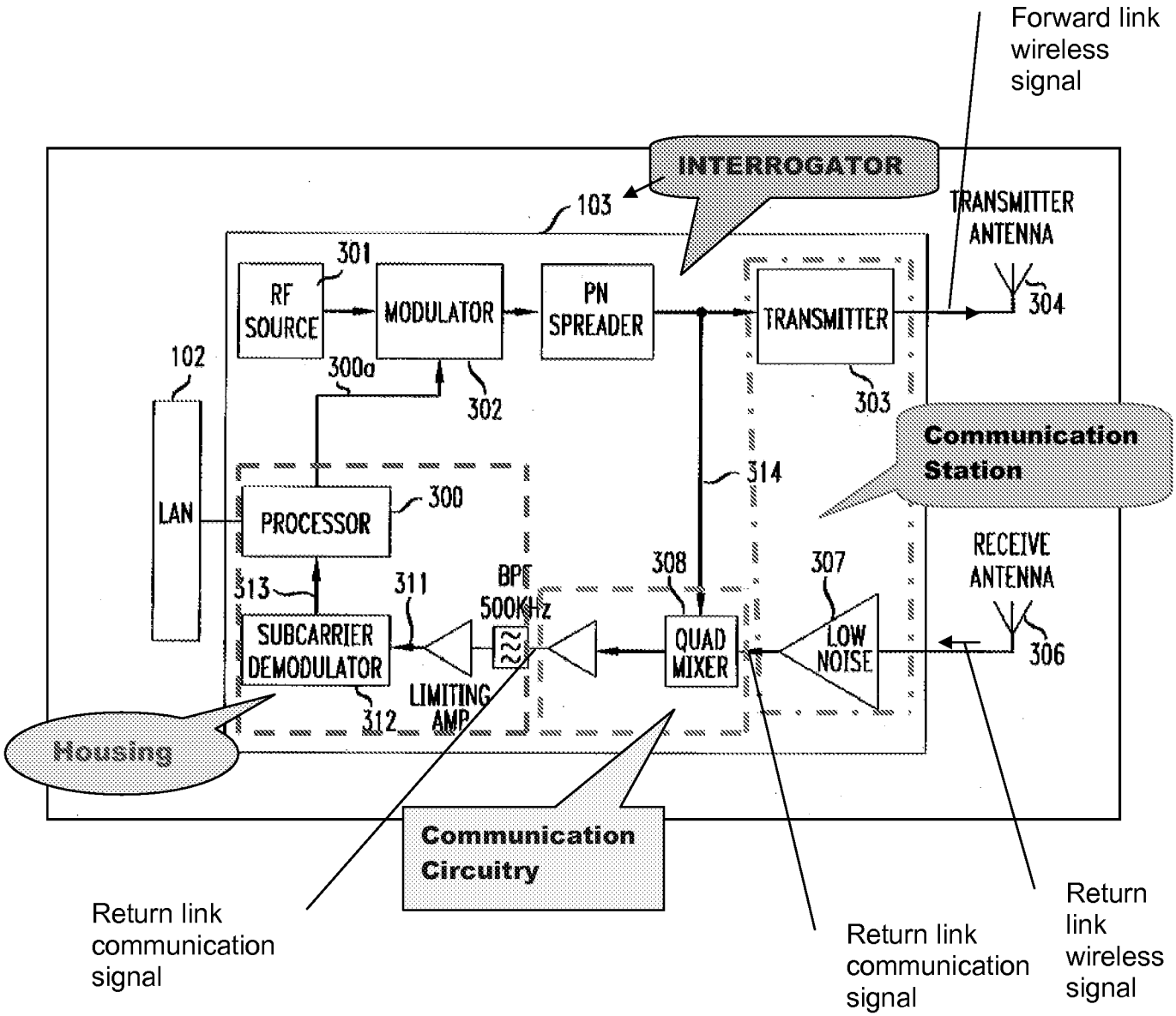
(See Copied and Labeled Drawing of Fig. 3 of MacLellan on Next Page)

Below is shown the prior art drawing, figure 3, of the cited main reference MacLellan, wherein the **"Interrogator" block 103** Includes:

"Housing" block comprising components 300, 312, 310a, and 310;

"Communication Circuitry" block comprising components 308 and 309;

"**Communication Station" block** comprising components 303 and 307.



B. With respect to section B for the 35 U.S.C 103 rejection over MacLellan in combination with Reis, appellant states there is no suggestion or motivation either in the references themselves or the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

However, the examiner respectfully disagrees and recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Appellant states in page 11 of Argument section B. that the motivation to save time is baldly alleged, and the motivation to reduce the need to have another interrogator built is contrary to the explicit multiple interrogator 103 arrangement of MacLellan.

However, the examiner respectfully disagrees. The main reference (MacLellan) is combined with the secondary reference (Reis et al, hereinafter Reis) wherein the one transceiver (communication station 303 & 307) within the interrogator of MacLellan is modified with plural communication stations (transceivers 103-1 to 103-M, 101-1 to 101-M) connected to interrogator housing (102) in order to enhance the function of broadcasting commands on a one-to-many (point-to-multipoint) basis from one interrogator to a large unknown numbers of tags simultaneously instead of on a one-to-one (point-to-point) basis as in MacLellan which reduces the need to have another interrogator communicate with other tags at the same time. The examiner recognizes

that appellants should consider the references as a whole in responding to the rejection made by the examiner. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In other words, it would have been obvious to modify the interrogator of MacLellan to have multiple communication stations in order to allow the one interrogator of Reis to communicate with a plurality of tags using its plural transceivers in an "organized, time and energy efficient manner which resolves communication contentions" as suggested by Reis (abstract; col 6, lines 34-40) which is not "baldly alleged" as stated by appellant. Therefore, obviousness has been established by combining or modifying the teachings of the prior art to produce the claimed invention since there is some teaching, suggestion, or motivation to do so found in the any one or all of the references (herein the secondary reference itself). See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In page 10 of appellant's arguments section B., last paragraph, appellants state MacLellan

already teaches communications using "plural interrogators" having multiple transmitters and receivers for communication with tags without any modification per Reis. Appellants submit that it is inappropriate to rely upon a teaching of another reference (Reis) when the reference being modified (MacLellan) already provides teachings for which the other reference is provided. However, the examiner believes appellant is directing away from the claimed invention in order to point out to other embodiments of the cited reference, MacLellan. Examiner recognizes that appellant should point out the difference in terms of what is claimed and how the cited references, MacLellan and Reis read on the claimed limitations instead of pointing to other disclosures or embodiments of the cited reference (MacLellan), herein the term "plural interrogators" which is not claimed.

It is noted here that the features upon which applicant relies (i.e., "plural interrogators") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, the examiner would like to point out to exemplary claim 10 of applicant's claims, wherein the claim states "**An** interrogator of a wireless communication system comprising: a plurality of communication stations…….". Accordingly, the examiner combined the secondary reference, Reis, not for the "multiple interrogators" but for one or "An" interrogator comprising plural communication stations (see elements 103-1 to 103-M and 101-1 to 101-M in fig. 2 of Reis) as claimed since the main reference, MacLellan, does not teach the plural communication stations within the one interrogator. Therefore, appellant's statement that "it is inappropriate to rely upon a teaching of

another reference (Reis) when the reference being modified (MacLellan) already provides teachings for which the other reference is provided" is misplaced based on the fact that it does not correspond to what's being claimed and based on the fact that the main reference, MacLellan, does not provide the disclosure of plural communication stations in which the secondary reference (Reis) make up the deficiency for.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). MacLellan discloses the claimed invention, an interrogator having a communication station, but does not disclose the interrogator having a plurality of communication stations. The secondary reference (Reis) disclose an interrogator 7 (see fig. 2) having a plurality of communication stations (101-1 to 101-M, 103-1 to 103-M). It would have been obvious to modify the interrogator of MacLellan to have multiple communication stations instead of one communication station in order to allow the one interrogator of Reis to communicate with a plurality of tags using its plural transceivers in an "organized, time and energy efficient manner which resolves communication contentions" by using the notoriously old and well-known technique of one-to-many (point-to-multipoint) broadcasting to the plurality of tags instead of a one-to-one basis

(point-to-point) as suggested by Reis (abstract; col 6, lines 34-40). Therefore, obviousness has indeed been established by combining or modifying the teachings of the prior art to produce the claimed invention since there is some teaching, suggestion, or motivation to do so found in the references themselves (herein the secondary reference, Reis). See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Also, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Based on MPEP §2144.04, Legal Precedent as Source of Supporting Rationale, it also would have been obvious to one having ordinary skill in the art at the time the invention was made to have more than one communication stations, since it has been held that mere duplication of the essential working part of a device (herein the communication station) involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. As a result, the rejection under 35 U.S.C 103 under MacLellan in view of Reis is deemed as proper.

C. With respect to section C of appellant's arguments, even though independent claim 10 and its dependent claims 11-12, 16, 17, and 46 are rejected under 35 U.S.C 103 over MacLellan in view of Reis, no argument about the secondary reference, Reis, is shown in this section C. Appellant again argue the circuit components of the main reference, MacLellan, do not teach a housing and do not disclose the housing is remotely located from the communication station. However, the examiner had responded in detail how the examiner interpreted and had read/mapped the cited prior art on these claimed limitations in the Response to Argument in section A along with the copied and labeled prior art figure from MacLellan **(please see section A above).**

D. With respect to section D of appellant's arguments, even though independent claim 18 and its dependent claims 19, 21-22, and 47 are rejected under 35 U.S.C 103 over MacLellan in view of Reis, no argument about the secondary prior art reference, Reis, is shown in this section D. Appellant again argue the circuit components of the main reference, MacLellan, do not teach a housing and do not disclose the housing is remotely located from the communication station. However, the examiner had responded in detail how the examiner interpreted and had read/mapped the cited prior art on these claimed limitations in the Response to Argument in section A along with the copied prior art figure from MacLellan **(please see section A above).**

E. Appellant again restated the same argument as section A for the 35 U.S.C 102 rejection of independent claim 24 and its dependent claims 25-27, 29-30, 41, and 48, wherein the cited reference, MacLellan, do not teach a housing and do not disclose the housing is remotely located from the communication station. However, the examiner

had responded in detail how the examiner interpreted and had read/mapped the cited prior art on these claimed limitations in the Response to Argument in section A above along with the copied prior art figure from MacLellan **(please see section A above).**

F. With respect to section D of appellant's arguments, even though independent claim 31 and its dependent claims 32-33, 36, 37, and 49 are rejected under 35 U.S.C 103 over MacLellan in view of Reis, no argument about the secondary prior art reference, Reis, is shown in this section F. Appellant again argue the circuit components of the main reference, MacLellan, do not teach a housing and do not disclose the housing is remotely located from the communication station. Claim 35 is mentioned to depend from independent claim 31, and is argued for the same reason as independent claim 31. However, the examiner had responded in detail how the examiner interpreted and had read/mapped the cited prior art on these claimed limitations in the Response to Argument in section A above along with the copied prior art figure from MacLellan **(please see section A above).**

G. With respect to claims 4 and 27, appellant states MacLellan do not disclose the housing includes adjustment circuitry that is configured to output the return link communication signal at a substantially constant level. The examiner made new grounds of rejection for these claims as being unpatentable over MacLellan in view of Yamamoto (US 5,361,395). MacLellan disclose the housing includes adjustment circuitry comprising a band pass filter 310 and limiting amplifier 310a which amplifies the power level of the signal to an operating range where little or no distortion occurs. Yamamoto discloses an adjustment circuitry (automatic gain controller/AGC 10; filter 17,

IF amplifier 16; figure 1; see column 4, lines 22-26; col 3, lines 11-20) configured to output the return link communication signal at a substantially constant level (AGC 10 is capable of adjusting the power level of the return link communication signal by a gain control signal adjusting a gain of IF amplifier 16 to keep constant the power level of the output signal). In response to applicant's argument that there is no explanation of how an amplifier provides a signal at a constant level, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the automatic gain control of Yamamoto to the IF amplifier of MacLellan in order to enable the output signal to be quickly returned to its previous level by providing an AGC circuit in which control data to be sent to the amplifier is generated on the basis of previously held data on the amplifier's output level, so the gain is controlled to produce a constant output signal as suggested by the secondary prior art Yamamoto itself (col 3, lines 11-20). In this case, the teaching and motivation is found in the secondary reference itself and is notoriously old and well known in the knowledge available to one of ordinary skill in the art.

The examiner also use the rationale of applying a known technique (automatic gain control, AGC) to a known device (IF amplifier of main reference MacLellan) ready

for improvement to yield predictable results (see MPEP §2141 III & MPEP §2143, MPEP §2141 III states "The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" KSR, 550 U.S. at ___, 82 USPQ2d at 1396. Exemplary rationales that may support a conclusion of obviousness include: (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results and (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. See also MPEP §2143 for a discussion of the rationales used to support a finding of obviousness.--------. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a known technique (automatic gain control, AGC of Yamamoto) to a known device (IF amplifier of main reference MacLellan) in order to enable the output signal to be quickly returned to its previous level by providing an AGC circuit in which control data to be sent to the amplifier is generated on the basis of previously held data on the amplifier's output level, so the gain is controlled to produce a predictable result, herein a constant output signal based on previously held data as suggested by the secondary prior art Yamamoto itself (col 3, lines 11-20).

H. With respect to claims 13 and 34, appellant state the combination of MacLellan and Reis do not disclose the housing includes adjustment circuitry that is configured to output the return link communication signal at a substantially constant level. The examiner made new grounds of rejection for these claims as being unpatentable over MacLellan in view of Reis and further in view of Yamamoto (US 5,361,395). The argument in this section is addressed with the same reason stated in section G above **(please see section G above).**

I. With respect to claim 7, appellant argue the communication circuitry of MacLellan do not include a coaxial RF cable. Appellant states the Office Action relies upon the teachings of reference "308" (mixer) and amplifier 309 as allegedly disclosing the claimed limitations, and that applicants have electronically searched MacLellan and failed to uncover any mention of a cable. However, the examiner recognizes that appellant should point out the difference in terms of what is claimed and how the cited references, MacLellan and Reis read on the claimed limitations instead of pointing to other disclosures or embodiments of the cited reference (MacLellan), herein appellant allegedly labeled the cable one of the mixer 308 and amplifier 309 itself. The examiner clearly explained in the Office Action the “cable” is not the mixer and/or amplifier itself, but the cable shown in figure 3 of MacLellan which connects the two circuit components (herein the mixer 308 and amplifier 309) together (It is noted here by the examiner, the word "cable" does not have to be in the specification of the cited reference MacLellan as appellant have electronically searched every word, since the examiner can point to an element shown one of the drawings of the cited reference as teaching a claimed

limitation). To address appellant's argument with respect to the mixer 308 and amplifier 309 being within the same device 103, the examiner recognizes that appellant should point out the difference in terms of what is claimed and how the cited references, MacLellan and Reis read on the claimed limitations instead of pointing to other disclosures or embodiments of the cited reference (MacLellan), herein the mixer 308 and amplifier 309 are within the same device 103. The examiner would like to point to appellant's claim language in claim 7, "the communication circuitry includes a coaxial RF cable" wherein the cable is logically interpreted as being part of the communication circuitry which includes mixer 308, amplifier 309, wherein the cable connects the mixer 308 to amplifier 309 (as shown in figure 3 of MacLellan in section A above). However, to address appellant's statement why a cable connects the mixer 308 and amplifier 309 which are within the same device, the interrogator 103, of MacLellan, the examiner respectfully submit that the communication circuitry (mixer 308 and amplifier 309) of MacLellan is part of the device (interrogator 103) wherein a cable connecting circuit components (308 and 309) of the communication circuitry within the same device (103) is explicitly shown in figure 3 MacLellan. The examiner likes to point out this is read in light of applicant's specification (see figure 1) wherein the communication circuitry (106) is part of the interrogator (26) given the broadest reasonable interpretation according to MPEP section 2111.

New grounds of rejection is made for the specific type of cable being used, herein an RF coaxial cable. The examiner takes official notice that a RF coaxial cable can be substituted for a cable, wherein its type or material had not been specified in

MacLellan. Based on MPEP §2141 III & MPEP 2143, an exemplary rational enumerated in MPEP §2141 (Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103, II. The Basic Factual Inquiries of Graham v. John Deere Co.) MPEP §2141 III states "The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" KSR, 550 U.S. at ___, 82 USPQ2d at 1396. "Simple Substitution of one Known Element for Another to obtain Predictable Results" illustrate one of the reasonable rationales for supporting a prima facie case of obviousness under 35 USC § 103. Therefore, it is indeed appropriate to substitute an RF coaxial cable for a type of cable which is not specified in MacLellan. As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute MacLellan's cable with an RF coaxial cable in order to enhance its information/data carrying capacity to larger quantities as is notoriously old and well known in the art.

J. With respect to claim 16, which is rejected under MacLellan in view of Reis, appellant's argument is the same as the argument in section I above. Therefore, the examiner chooses to respond to the argument in this section with the same reasoning as in section I above.

K. With respect to claim 8, MacLellan disclose the wireless communication system according to claim 1, including a communication station, a communication circuitry, and an interrogator housing, wherein Reis disclose the communication circuitry includes a plurality of wireless transceivers (103-1->103-M, 101-1->101-M; see Reis, fig. 2). Appellant further argue the combined teaching of MacLellan and Reis fail to teach wireless communications within the respective interrogators of MacLellan and Reis, but merely teach one wireless link between the interrogator and tags. However, a wireless signal received via antenna 306 of MacLellan is communicated to element 307 of communication station 303, 307 to generate a return link communication signal (as claimed in claim 1 and 10), the return link communication signal is then relayed to communication circuitry 308 and 309. In the same field of endeavor, Reis teach wireless signals received via antenna units 117-1 -> 117-M of interrogator 7 which is communicated to RF REC 101-1 -> 101-M to generate the return link communication signals which are then relayed to housing elements ADC 140, and/or processor 102 for processing. Therefore, there is in fact wireless communications within the respective interrogators of MacLellan and Reis.

With respect to claim 17, Appellant states the communication circuitry is in addition to the claimed communication stations. In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the

test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The examiner had labeled the communication station in MacLellan to include only part of the entire transmitter and receiver circuitry components, while the communication circuitry include the remainder of the entire transmitter and receiver circuitry components (see labeled drawing in section A above). It is therefore proper to have the communication circuitry be a part of the entire RF modules 123-1->123-M of Reis which includes a plurality of RF TRANS 103-1 to 103-M and a plurality of RF REC 101-1 to 101-M as shown in fig. 2 of Reis. The claimed language of claims 8 and 17 states the plurality of transceivers (101-1 to 101-M, 103-1 to 103-M) are individually coupled to one of the housing (element 102 and/or element 140 and/or element 119 of fig. 2 of Reis which is read in light of applicant specification wherein the transceivers are individually coupled to elements 70, 76, 82 of the interrogator 14 in applicant's figure 5) and the communication station. Appellant further argue the combined teachings of MacLellan and Reis fail to teach wireless communications within the respective interrogators of MacLellan and Reis, but merely teach one wireless link between the interrogator and tags. However, a wireless signal received via antenna 306 of MacLellan is communicated to element 307 of communication station (303, 307) to generate a return link communication signal (as claimed in claim 1 and 10 and shown in labeled drawing in section A above), the return link communication signal is then relayed to communication circuitry 308 and 309. In the same field of endeavor, Reis teach wireless signals received via antenna units (117-1 -> 117-M) of interrogator (7)

are communicated to communication circuitry (RF REC 101-1 -> 101-M) to generate the return link communication signals which are then relayed to interrogator housing (ADC 140, and/or processor 102) for processing. Therefore, there is in fact wireless communications within the respective interrogators of MacLellan and Reis.

L. With respect to claim 51, appellant argues MacLellan do not disclose the housing is configured to house the circuitry configured to receive and process the return link communication signal. However, the examiner respectfully disagrees. As shown in figure 3 and column 3, lines 45-62 of MacLellan, given the broadest reasonable interpretation as stated in MPEP section §2111, the housing is configured to house circuitry component 310 (BPF), and/or components 310a (Limiting Amp), 312 (Subcarrier Demodulator), 300 (Processor), each of these components taken alone may already be considered a housing configured to receive the return link communication signal from communication circuitry 308 & 309. In another alternative, all of the components taken integrally as a whole, wherein circuitry elements 310, 310a, 312, and 300 can be integrated into one single baseband block as shown in “Housing” block labeled in the above labeled drawing of section A (***Note: see copied and labeled figure 3 of MacLellan shown above***). The housing is configured to receive the return link communication signal from communication circuitry 308 & 309 and processor 300 is configured to process the return link communication signal.

The examiner also would like to point out that applicant's specification (fig. 5) also show an interrogator housing 14 is configured to house a plurality of circuit elements 70, 72, 74, 76, 78, 80, 82, 84. Therefore, it is in fact considered a fair interpretation, given the

broadest reasonable interpretation in light of the specification according to MPEP §2111, that the housing in the cited prior art, MacLellan, which also is configured to house a plurality of circuit elements (310, 310a, 312, and 300) as explained above, is analogous to applicant's figure 5 wherein applicant's housing 14 comprises a plurality of circuit elements 70, 72, 74, 76, 78, 80, 82, 84. See MPEP §2111 ------for claim interpretation, during patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard-------.

M. With respect to claim 53, appellant submit the cited prior art, MacLellan, fail to disclose the communication station and housing comprise respective different circuit devices. However, the examiner respectfully disagrees. The examiner had labeled the claimed communication station as circuit components 303 and 307 as shown in copied figure 3 of MacLellan in section A above, and had labeled the claimed housing as circuit components 300, 313, 310, and 310a as shown in figure 3 of MacLellan in section A above. Therefore, the examiner had fairly interpreted the communication station and housing comprise respective different circuit devices. Appellant also argue references numerals 307, 303, 310, 310a, 312, and 300 are of the single interrogator device 103. However, based on appellant's claim language of claim 1 which states "an interrogator including communication circuitry.....and housing.....", the examiner had interpreted this to mean the communication station and the housing are both considered a part of

the same interrogator device. Therefore, it is respectfully submitted that MacLellan teaches the communication station and the housing comprise respective different circuit devices of the single interrogator device.

N. With respect to claims 54-55, appellant alleges the office has failed to identify any teaching that mixer 308 or amplifier 309 of the communication circuitry of MacLellan internal of the single interrogator device 103 communicate wireless signals. However, based on Appellant's claimed invention, claims 54-55 recite the communication circuitry is configured to "communicate" the return link communication signal comprising a wireless signal. The examiner acknowledges Appellant fails to realize the drawing of MacLellan can be interpreted to read on applicant's further limitations of claims 54-55. In the figure 3 of MacLellan shown and labeled in section A above, a wireless signal received via antenna 306 of MacLellan is communicated to low noise amplifier 307 which is part of communication station (303, 307) to generate a return link communication signal comprising a wireless signal (as claimed in claim 1 from which claims 54-55 depend from), the return link communication signal is then relayed or "communicated" to communication circuitry mixer 308 and amplifier 309 for frequency conversion to intermediate frequency and for signal strengthening to output a frequency converted and amplified "return link communication signal". Therefore, there is in fact wireless communication within the interrogator of MacLellan.

O. With respect to claim 55, appellant argue the Office has failed to identify any teaching that references 308 and 309 communicate wireless signals having a frequency outside of the frequency band of the wireless communications of the forward and return

link wireless signals. However, the examiner respectfully disagrees. In the cited reference shown in figure 3 of MacLellan, copied and labeled in section A above, a wireless signal received via antenna 306 of MacLellan is communicated to low noise amplifier 307 which is part of communication station (303, 307) to generate a return link communication signal (as claimed in claim 1 from which claims 54-55 depend from), the return link communication signal comprising a wireless signal is then relayed or "communicated" to communication circuitry mixer 308 and amplifier 309 for frequency conversion to intermediate frequency and for signal strengthening to output "the return link communication signal". The communication circuitry 308 & 309 is then configured to communicate the return link communication signal (return link communication signal at the output of communication circuitry 308 & 309 of fig. 3 of MacLellan shown in section A above) comprising a wireless signal having a frequency outside of the frequency band of the wireless communications of the forward and return link wireless signals (since the wireless signal has been downconverted via mixer 308, from a higher radio frequency to an intermediate frequency, the wireless signal contains a frequency {an intermediate frequency within the lower IF band} outside of the frequency band {higher RF band} of the forward and return link wireless signals {return link wireless signal received from antenna 306 and forward link wireless signal transmitted from antenna 304 as shown and labeled in figure 3 of MacLellan in section A above}. Therefore, there is in fact wireless communication of signals having a frequency outside of the frequency band of the wireless communications of the forward and return link wireless signals within the interrogator of MacLellan. As a result, the system of

MacLellan have provided evidence of prior art to read on the limitation as now claimed in claim 55.

P. With respect to claim 56, appellant alleges MacLellan does not teach the communication station and housing are located in different geographic locations which also of the same interrogator 103. However, the examiner respectfully disagrees. As shown in fig. 3 of MacLellan, the "Housing" block (reference numeral block 310, 310a, 312, and 300) is located a spatial distance away from the "Communication Station" block (reference numeral block 303 and 307), or in other words, placed apart from the standpoint of being positioned in another area spatially separated from an original base point, which reads on "located in different geographic locations", given the broadest reasonable interpretation according to MPEP § 2111. The communication station (transmitter 303 & low noise amplifier 307) is not even adjacent to the housing (310, 310a, 312, and 300) since it is separated by reference numeral blocks 308 and 309.

Also, based on the drawings (figure 1) in applicant's specification, an interrogator 26 "includes" interrogator housing 14 and communication station 120 which corresponds to the claim language in claim 1 of appellant's claims which states "an interrogator including a communication station configured to output…….and a housing remotely located", which means the communication station and the housing are both considered part of the same interrogator. MPEP§ 2111 recites ------for claim interpretation, during patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision

in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard: The Patent and Trademark Office determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004)--------.

Therefore, the claim language, the housing is "located in a different geographic location" with respect to the communication station, is given the broadest reasonable interpretation in light of the specification according to MPEP § 2111, to correspond with applicant's drawings and claims to be spatially separated but still within the same device, herein the "Interrogator".

Accordingly, the prior art MacLellan is indeed fairly interpreted to have the interrogator 103 including the "Housing" block shown in the above copied figure 3 of MacLellan (reference numeral block 310, 310a, 312, and 300) (***Note: see figure 3 shown above in section A of the Response to Arguments section***) to be "located in different geographic locations" or, in other words placed apart in another area or location within the interrogator, from the communication station (303 and 307) by being spatially separated by the "Communication Circuitry" block (reference numeral blocks 308 and 309) as disclosed in the below fig. 3 of MacLellan (**Note: See figure 3 shown above in section A***) which is read in light of applicant's drawings and specification as

explained directly above, wherein the interrogator housing and the communication station are included within the same interrogator device.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to

reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/Lana N. Le/

Acting SPE of Art Unit 2618

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

Conferees:

/Matthew D. Anderson/

Supervisory Patent Examiner, Art Unit 2618

//Curtis Kuntz//

Supervisory Patent Examiner, Art Unit